AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows:

Amend the title of the invention as follows:

Duplex image forming device[[,]] having a reversible transportation unit inserted into an ~~device and~~ image forming device

Amend the paragraph [0004] beginning on page 2, line 23 as follows:

The present invention provides a reversible transportation unit which can reduce the installation space of an image forming device and which can reduce changes in the main body of the image forming device, and an image forming device for which the reversible transportation unit can be inserted therein.

Amend the paragraph [0006] beginning on page 3, line 22 as follows:

According to the present invention, a width of the reversible transportation unit (thickness in a horizontal direction from the side of the image forming device) can be reduced by a length so that at least a part of the motor is disposed in the image forming device by protruding outward from the contacting surface of the main body frame. As a result, the installation space of the image forming device can be reduced. Moreover, since the motor for driving the transportation rollers of the reversible transportation unit is disposed at the reversible transportation unit side, it becomes unnecessary to provide a driving system for the reversible transportation unit in the

main body of the image forming device. As a result, a designer hardly needs to make a design change.

Amend the paragraph [0007] beginning on page 4, line 8 as follows:

That is, since the motor, which requires a large space in the reversible transportation unit, is protruded outward with a part of the motor being disposed in the ~~device~~ main body of the image forming device when the reversible transportation unit is inserted into the image forming device, the width of the reversible transportation unit can be minimized as much as possible. For example, the width of the reversible transportation unit can be designed based on the width of the transportation rollers. Moreover, by providing in the reversible transportation unit, the driving system for the reversible transportation unit which was conventionally disposed in the ~~device~~ main body of the image forming device, the ~~device~~ main body of the image forming device can be downsized. Furthermore, the driving system can be set only when necessary, and since the driving system is not set in the ~~device~~ main body of the image forming device at all times, the driving system in the ~~device~~ main body of the image forming device can be simplified.

Amend the paragraph [0008] beginning on page 4, line 23 as follows:

Moreover, by covering the part of the motor protruding outward with the cover member, when the reversible transportation unit is spaced from the image forming device for removing the reversible transportation unit or for solving a paper jam, the heated motor is not exposed, and [[the]] contact with the motor can be prevented.

Amend the paragraph [0009] beginning on page 5, line 1 as follows:

Moreover, an engaging unit which engages with the side of the image forming device and the motor are disposed on the main body frame in a manner to be located above the paper reversible transportation path when the reversible transportation unit is inserted into the image forming device. As a result, the reversible transportation unit is inserted into the ~~device~~ main body of the image forming device under a stabilized state. That is, by disposing the heavy motor and the engaging unit in the reversible transportation unit, the reversible transportation unit can be engaged with the image forming device at a position close to a barycentric position, and the reversible transportation unit can be provided under an even more stabilized state.

Amend the paragraph [0025] beginning on page 7, line 16 as follows:

The embodiments of the present invention will be described in ~~details~~ detail. Further, in this specification, a "side" of a device main body means the sides other than an upper side and a lower side, and includes a front side and a back side.

Amend the paragraph [0029] beginning on page 9, line 1 as follows:

The fed paper is transported to the printing unit 4 by a feed roller 21 and a press roller 22. To print an image onto the transported paper, the printing unit 4 includes a toner case 23, a memory erasing brush 24, a charger 25, a photoconductive drum 26, a transfer roller 27, an exposure head 28, and a fuser roller 29. First, the surface of the photoconductive drum 26 is

charged uniformly by the charger 25. The charged photoconductive drum 26 is exposed by the exposure head 28 according to an image printing signal, and an electrostatic latent image is formed on the photoconductive drum 26. Next, the toner stored in the toner case 23 is transferred from [[the]] a supply roller 30 via [[the]] a developing roller 31 to the electrostatic latent image on the photoconductive drum 26, and the electrostatic latent image is visualized. Then, the toner image formed on the surface of the photoconductive drum 26 is transferred onto a paper by the transfer roller 27. The transferred toner image is sandwiched and heat-pressed by the fuser roller 29 and [[the]] a press roller 32, and fused on the paper. The fused paper is sandwiched between a discharge roller 33 and a press roller 34 and transported out onto a paper discharge tray 35.

Amend the paragraph [0032] beginning on page 10, line 12 as follows:

Figure 2 shows a state in which the manual paper feed tray 37 is swung outward with the swing shaft 39 as the center and spaced from the storage opening 38, i.e., a state in which the manual paper feed tray 37 is located at an unlocked position. The reversible transportation unit 43 is inserted above the manual paper feed tray 37. A protrusion 44 is formed in a lower part of the reversible transportation unit 43, and the protrusion 44 is inserted into the storage opening 38. A driving mechanism such as a motor to be described later is provided in the upper part of the reversible transportation unit 43, and the driving mechanism is inserted in the device main body. A claw (not shown) is formed on a bottom face 45 of the protrusion 44, and the claw is caught by a supporting table 46 of the main body of the image forming device when the reversible

transportation unit 43 is inserted into the ~~device main body~~ image forming device 1. Under a state in which the reversible transportation unit 43 is inserted in the ~~device main body~~ image forming device 1, the protrusion 44 is protruding to the device main body side from the surface of the reversible transportation unit 43 that is contacting against the outermost side of the ~~device main body~~ image forming device 1.

Amend the paragraph [0034] beginning on page 11, line 15 as follows:

In the ~~device main body~~ image forming device 1, a reversible transporting-out path is formed from the discharge roller 33 via a lower guide 52 to a paper transportation outlet 53. Moreover, in the storage opening 38, a reversible transporting-in path is formed above a manual paper feed opening from a paper transportation inlet 54 via a guide 55 to the feed roller 21. Therefore, when the reversible transportation unit 43 is inserted into the ~~device main body~~ image forming device 1, the reversible transporting-out path, the reversible transportation path 47, and the reversible transporting-in path are connected, and a transportation path is formed as shown with the dashed line in Figure 2.

Amend the paragraph [0035] beginning on page 12, line 1 as follows:

When controlling the reversible transportation of the paper, the discharge roller 33 is driven, and the paper, which an image is formed on one side, is once discharged toward the discharge tray 35. Then, in response to an output of the paper end detecting sensor 36, the discharge operation is stopped. At this time, the lower edge of the paper is sandwiched between

the discharge roller 33 and the press roller 34. Then, a motor in the reversible transportation unit 43 is driven, the discharge roller 33 is rotated to transport the paper in a reverse direction, and the paper is transported with the lower edge of the paper as a head through the reversible transporting-out path to [[a]] the paper transportation outlet 53. The feed roller 48 and the feed roller 50 rotate in accordance with the reverse rotation of the discharge roller 33. The paper is transported through the reversible transportation path 47, transported from the paper transportation inlet 54 to the reversible transporting-in path, and contacted against the feed roller 21 again. Then, an image is formed on the other side (back side) of the paper by the printing unit 4, and the images are formed on both sides of the paper.

Amend the paragraph [0037] beginning on page 13, line 7 as follows:

In the image forming device 1, a paper transportation path in the device main body is formed in a vertical direction upward from the paper feed unit 3 and connected to the discharge tray 35 located above. As described above, by forming the paper transportation path to extend in the vertical direction, the distance of the transportation path can be reduced, and the device main body can be downsized. Therefore, the photoconductive drum 26, the transfer roller 27 and the fuser roller 29 of the printing unit 4 are also arranged in a vertical direction along the paper transportation path, and laid out at one side in a width direction (in the example of Figures 1 and 2, the left side) of the device main body. By adopting such a layout, the installation space of the device main body can be brought closer to the maximum size of the papers stacked in the paper feed unit 3, and the device main body can be downsized. Meanwhile, since the original

~~transporting~~ transportation device (ADF) 12 is disposed on the left side part of the flat bed platen 14, when comparing the width in the longitudinal direction, as shown in Figure 1, the original scanning ~~part~~ unit 2 is wider than [[the]] a housing 5 of the image forming device, which is located below and disposed with the paper feed unit 3 and the printing unit 4, by a distance "d".

Amend the paragraph [0038] beginning on page 14, line 1 as follows:

Conventionally, to cover such a difference in the width for the purpose of design, the width of the housing 5 was formed to be the same as the width of the scanning unit 2. However, in the present embodiment, an outer frame 6 of the scanning unit 2 is disposed to protrude outward from the side frame of the housing 5, at the side where the fuser roller 29 is provided in proximity to the side frame. By adopting such a layout, even when the fuser roller 29 is heated, since space is formed to the outside of the side frame, the heat can be released efficiently. As described above, if the outer frame 6 of the scanning unit 2 is not protruding outward from the side frame of the device main body, there are cases where the image forming device 1 is disposed with the side frame of the fuser roller [[29]] side being in [[a]] close contact with a wall. In such a case, the heat is not released efficiently from the fuser roller 29, and there is a possibility to cause a failure. However, in the present embodiment, such a problem can be avoided.

Amend the paragraph [0039] beginning on page 14, line 18 as follows:

Moreover, as shown in Figure 2, the outermost position in the horizontal direction from the side frame inserted with the reversible transportation unit 43 is set to be located inward from

the protrusion of the outer frame 6 of the scanning unit 2. That is, the outermost position of the reversible transportation unit 43 is set to be located inward by [[the]] a distance "m" from a vertical surface passing through the outermost position of the protrusion of the outer frame 6. By setting in such a way, the space formed by the protrusion of the outer frame 6 can be utilized effectively. Moreover, if the image forming device 1 is placed so that the side, which is inserted with the reversible transportation unit 43, faces a passage of a person, the protrusion of the outer frame 6 restricts a path of a person and prevents a person from contacting against the reversible transportation unit 43. In other words, since the protrusion of the outer frame 6 is recognized, even if the reversible transportation unit 43 is inserted, the reversible transportation unit 43 does not interfere with the path of a person.

Amend the paragraph [0040] beginning on page 15, line 9 as follows:

Moreover, the outermost position of the manual paper feed tray 37 under the unlocked state is set inward by [[the]] a distance "n" from the vertical surface passing through the outermost position of the protrusion of the outer frame 6. By setting in such a way, as in the case of the reversible transportation unit 43, the space formed by the protrusion of the outer frame 6 can be utilized effectively and can be prevented from interfering with the path of a person.

Amend the paragraph [0042] beginning on page 15, line 22 as follows:

As shown in Figure 3, left and right side frames 101, a lower frame 102, a rear frame 103 and an upper frame 104 are formed as one body to form a main body frame 100. The lower

frame 102, the rear frame 103 and the upper frame 104 are formed between the left and the right side frames 101 from a lower side in this order. In addition, side guides 105 and 106 are formed inside the main body frame 100 along the reversible transportation path and fixed approximately in parallel with the side frames 101. A main body supporting plate 107 is disposed to the inner surface of the upper frame 104. Holes 108 and 109 are drilled through the main body supporting plate 107 to fix the reversible transportation unit 43 on the device main body by screws or the like. The side guides 105 and 106 curving toward the rear frame 103 are formed along the reversible transportation path 47. An outer guide 110 and an inner guide 111 are disposed between the side guides 105 and 106 along the curved shape in parallel with one another with a prescribed interval. The inner guide 111 is a guide located closer to the device main body, and the outer guide 110 is a guide located closer to the main body frame 100. The reversible transportation path 47, and a transportation inlet 112 and a transportation outlet 113 are formed in an area surrounded by four guides, the side guides 105 and 106, the outer guide 110 and the inner guide 111. The transportation inlet 112 is connected to the paper transportation outlet 53 of the device main body, and the transportation outlet 113 is connected to the paper transportation inlet 54 of the device main body.

Amend the paragraph [0046] beginning on page 17, line 22 as follows:

Figure 4 is a side view when viewing the reversible transportation unit 43 from the side frame 101. To facilitate the comprehension of the gear mechanism, the side frame 101, the motor 122 and the gear supporting plate 123 are shown with dashed lines. As described above,

the motor shaft 125 of the motor 122 is protruding from the hole of the gear supporting plate 123, and disposed to the opposite side of the side where the motor 122 is disposed on the supporting plate 123. A driving gear 126 is fixed on the motor shaft 125, and a double-reduction gear 127 is engaged with the driving gear 126. The double-reduction gear 127 consists of a larger diameter part 128 and a ~~smaller~~ small diameter part 129, and is attached rotatable to the gear supporting plate 123. The driving gear 126 is engaged with the ~~larger~~ large diameter part 127.

Amend the paragraph [0047] beginning on page 18, line 9 as follows:

A first transfer gear 130 is engaged with the ~~smaller~~ small diameter part 129, a second transfer gear 131 is engaged with the first transfer gear 130, and a third transfer gear 132 is engaged with the second transfer gear 131. The transfer gears 130 through 132 are attached rotatable to the gear supporting plate 123. As shown in Figure 4, the transfer gears 130 through 132 are disposed to protrude outward (in Figure 4, leftward) from the edge of the side frame 101. By disposing the transfer gears 130 through 132 to protrude outward, when the reversible transportation unit 43 is inserted into the image forming device 1, a driving transfer mechanism inside the device main body and the third transfer gear 132 engage with one another, and a driving force of the motor 122 is transferred.

Amend the paragraph [0048] beginning on page 18, line 22 as follows:

A roller driving gear 133 is also engaged with the ~~smaller~~ small diameter part 129. The roller driving gear 133 is fixed to the roller shaft 116 attached with the feed rollers 48. A pulley

134 is protruding from the side guide 106 of the roller driving gear 133. A pulley 135 having the same diameter as the diameter of the pulley 134 is fixed to the roller shaft 119 having the feed rollers 50. An endless belt 136 is wound around the pulley 134 and the pulley 135.

Amend the paragraph [0049] beginning on page 19, line 4 as follows:

When the motor 122 is driven and the motor shaft 125 rotates, the driving gear 126 rotates and the double-reduction gear 127 rotates. Therefore, the rotation of the ~~smaller~~ small diameter part 129 is transferred from the first transfer gear 130 to the roller driving gear 133, and the feed rollers 48 rotate. Since the pulley 134 also rotates at the same time, the pulley 135 rotates via the endless belt 136, and the feed rollers 50 rotate. As described above, the reversible transportation of the paper is carried out by the rotation of the feed rollers 48 and 50.

Amend the paragraph [0056] beginning on page 22, line 1 as follows:

In the above-described embodiment, the reversible transportation unit 43 includes a holding unit for holding the manual paper feed tray 37[[,]]. [[and]] When the manual paper feed tray 37 is ~~held~~ opened to the maximum position, the outer wall of reversible transportation unit 43 is positioned inside the end portion ~~side than the maximum opened position~~ of the manual paper feed tray 37 (position at the unlocked state as shown in Figure 2). However, such a holding unit can be provided to the device main body side. For example, as shown in Figure 10, an engaging protrusion 147 can be protruding from an intermediate part of the manual paper feed tray 37, and a bracket 148 having an engaging concave part to be engaged with the engaging

protrusion 147 can be formed on the device main body. As a result, the manual paper feed tray 37 can be held by the bracket 148.

Amend the paragraph [0059] beginning on page 23, line 4 as follows:

In the upper part of the reversible transportation unit 43, as shown in Figure 13, an opening 154 is provided at a position on the device main body where the gear supporting plate 123 attached with the motor 122 and the third transfer gear 132 or the like is inserted. In the opening 154, a cover plate 155 is mounted by screws 156. Therefore, when not inserting the reversible transportation unit 43, since the opening 154 is closed, dusts or the like can be prevented from entering the device main body. Moreover, as a method for closing the opening 154 by using other than the screws, as shown in Figure 14, a connecting part 157 having a thickness thin enough to be cut, can be formed around the cover plate 155.

Amend the abstract of the disclosure as follows:

A duplex image forming device includes an image forming device and a reversible transportation unit. The image forming device includes a paper transportation path, a paper feed unit which transports a paper to the paper transportation path, a printing unit which prints an image onto the paper, and a discharge tray where the paper printed with the image is discharged. The reversible transportation unit includes a main body frame having a contacting surface that contacts against the side of the image forming device, a reversible transportation path which transports-in the paper from a downstream side of the printing unit and transports-out the paper

to an upstream side of the printing unit in the paper transportation path, transportation rollers for transporting the paper through the reversible transportation path, and a motor ~~a motor~~ which drives the transportation rollers and is disposed protruding outward from the contacting surface of the main body frame so that at least a part of the motor is disposed in the image forming device when the reversible transportation unit is inserted into the image forming device.